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12 May 1981

East Europe Report

SCIENTIFIC AFFAIRS

No. 702

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RESULTS, TASKS OF SCIENTIFIC-RESEARCH INSTITUTES OF ACADEMY

Tirana ZERI I POPULLIT in Albanian 16 Jan 81 p 1

[Report by a ZERI I POPULLIT correspondent: "The Results and Tasks of the Scientific-Research Institutions of the Academy of Sciences"]

[Text] During 1980, the last year of the Sixth Five-Year Plan, a number of important results were achieved by the Academy of Sciences and by its dependent scientific-research institutions in the struggle for implementing the decisions of the Seventh Congress of the Albanian Workers Party and the Eighth Plenum of the Party Central Committee.

Thus, many important and complex studies on production have been studied with positive results in the field of mathematical sciences, utilizing the methods of mathematical computation, of information and of electronic technological accounting. In the field of physical sciences, the use of nuclear radiation in the study of practical problems has been expanded and the confrontation with various theoretical and practical problems of nuclear physics has begun. In the field of biological sciences, the biochemical study of natural substances has also been expanded, the work in the field of experimental physiology has been expanded, especially, the work with the use of oligoelements in agricultural fields, and results have been achieved in genetics linked with the creation of new hybrids in poultry and so forth. The first volume of the magnificent work "The Flora of the People's Socialist Republic of Albania" has been completed and presented for publication and the scientific conference on the problems of the further development of our synthetic chemical industry has been organized.

In the field of hydrometeorological sciences, studies have been expanded on the climate and hydrological characteristics of our country, giving a concrete aid to all the study, planning and building work in the fields of hydroenergy resources, of land reclamation and of the building of ports and so forth. Worth mentioning are the completion of the works: "The Hydrology of Albania" and "The Regionalizing of Winds and Snow in our Country" and so forth. In the field of hydraulic modelling, important problems have been solved in regard to the construction of hydroenergy stations and the study of petroleum and gas-rich areas and so forth. In the seismological field, important studies were carried out, such as "The Regionalizing of Seismology in the People's Socialist Republic of Albania," and a national symposium on the April 15 earthquake was organized with the participation of foreign scientists so forth.

In the field of social sciences, a number of generalizing works have been completed, relying always and on every occasion on the principles of Marxism-Leninism and on the teachings of the party and of Comrade Enver Hoxha. Thus, "The Dictionary of the Present Day Albanian Language", in one volume, has been completed and work has begun on a seven-volume dictionary and in the following works: "The History of the Albanian Literature of Socialist Realism," "The Political Economy of Socialism," the third volume of "The History of Albania" and so forth. Scientific sessions have been organized, such as the scientific session dedicated to the 100th anniversary of the birth of Prof. A. Xhuvani and the scientific session on the problems of the management of our economy. The magazine KULTURA POPULLORE [THE PEOPLE'S CULTURE] was published and the first issue of the magazine GJUHA JONE [OUR LANGUAGE] is being prepared for publication.

For the institutes subordinate to the Academy of Sciences, scientific-research work for 1981, the first year of the Seventh Five-Year Plan, along with the continuation of work on the larger works of several volumes, stipulates a number of new studies and scientific actions at the national and international level which will elevate our new science to a new level. Thus, the plan foresees the further insertion of the mathematical thought in our production institutes and the greater and greater adoption of mathematical methods in solving the great problems of production. In the field of physics, one sees the efforts in the field of neutron physics, X-ray fluorescence and laser rays. Studies have been stipulated for a deeper knowledge of the meteorological, climate and hydrological characteristics of our country; and interesting modelling experiments have been planned for the purpose of explaining the theoretical aspects of the construction of the Koman hydroelectric power station.

In the field of social sciences, too, work will continue on the development of monographic studies in the field of history, especially, the history of our people and of the building of socialism. In the field of language, work will continue, especially, on the seven-volume dictionary and on the history of the language; and work will also continue in the fields of the economy, of the people's culture and of archeology.

It is worth emphasizing here that work has begun on the drafting of the Albanian Encyclopedic Dictionary and the Encyclopedia of the Albanian World.

A very important scientific action, the scientific conference for the education of the Albanian people and for the formation of their language and culture, will be organized this year.

9150
CSO: 2102/3

NEW ELECTRONIC DEVICE 'PROGRAMA 602 EK' DESCRIBED

Sofia VOENNA TEKHNIKA in Bulgarian No 2, 1981 p 17

[Unattributed article: "Digital Program Control"]

[Text] The "Programa 602 EK" [Program 602 EK] electronic unit is designed for controlling industrial robots, welding machines, sorters and batchers, metalworking machines, conveyer systems as well as machines for the food, textile and other industrial sectors.

The "Programa 602 EK" unit provides economic and dependable control and is an excellent replacement for the relay switching devices. In comparison with these, the "Programa 602 EK" offers low price, great dependability, programming flexibility and quick program changing.

Programming is carried out by a changeable switching field or board (panels). There is also the possibility of prepreparing several programs. Special programming knowledge is not required.

Technical Specifications:

Type of memory -- removable switching board
Number of program steps -- 100
Number of inputs -- 38 (with possibility of expansion)
Number of outputs -- 28 (with possibility of expansion)
Functions which unit can perform -- logic
Programming principle -- with connecting cords (enough for building a diagram from the sequence of stages which must be realized)

Input signals are obtained by the closing of a mechanical contact. There is galvanic insulating between all the inputs of the unit. Maximum tolerable voltage is 500 volts.

There are 16 input signals with a voltage of 24 volts and output currents of 1.5 amps.

There are 12 relay contacts with parameters of 230 volts and 5 amps.

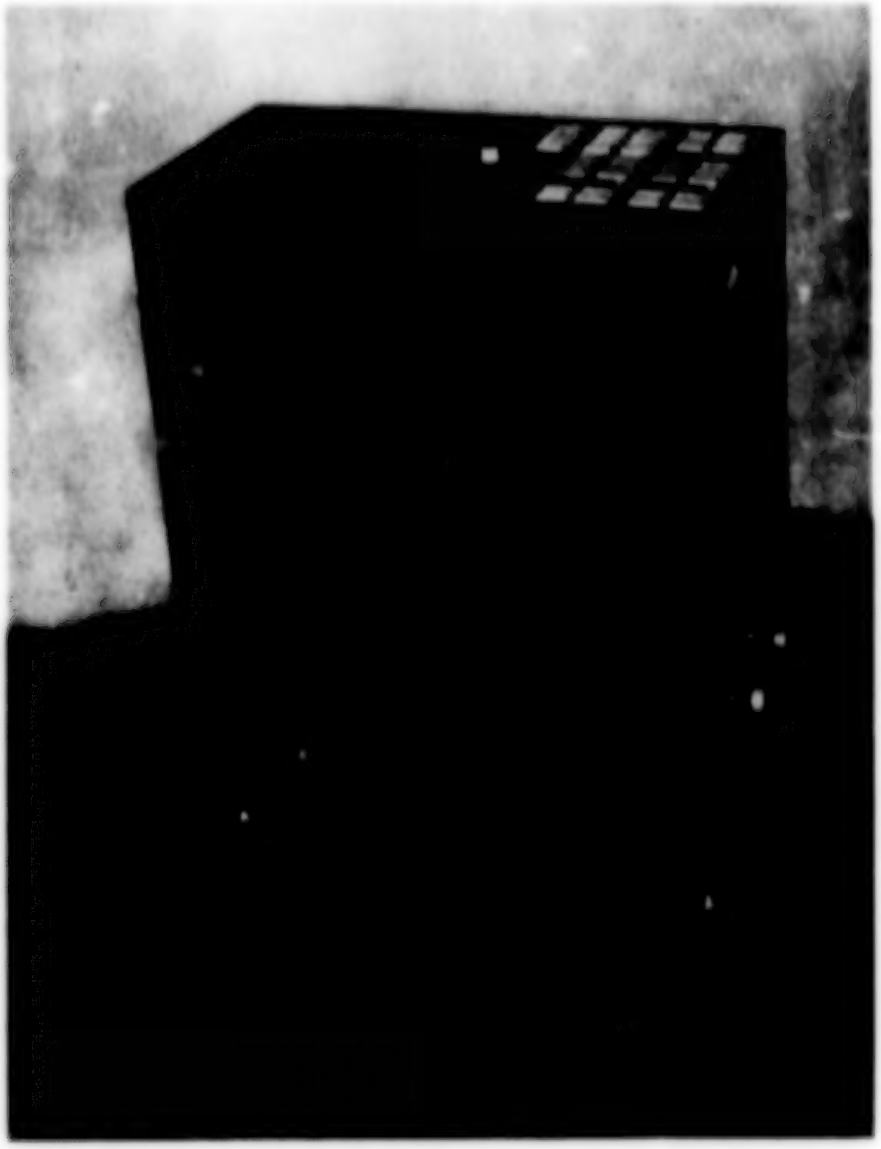
The unit operates with an external temperature of from 5 to 40° C and a relative humidity of 45-75 percent.

Supply voltage -- 380 volts

Tolerable change in grid voltage -- from -15 to + 10 percent

Weight -- 75 kg

Dimensions -- 740 x 360 x 840 mm



10272
CSO: 2202/9

BULGARIA

TECHNICAL SPECIFICATIONS, FUNCTIONS OF ES-1035 COMPUTER

Sofia VOENNA TEKHNIKA in Bulgarian No 3, 1981 pp 18, 19

[Unattributed article: "The ES-1035 Electronic Computer"]

[Text] The ES-1035 is a stationary universal electronic computer of the Unified System (ES EIM "Ryad-2" [Series-2 Unified Computer System]), program compatible with the remaining models of this system. It is designed to solve a broad range of scientific-technical, economic, logical-information and other problems both autonomously as well as in data processing systems which operate under "real time," "time sharing" or dialogue modes.

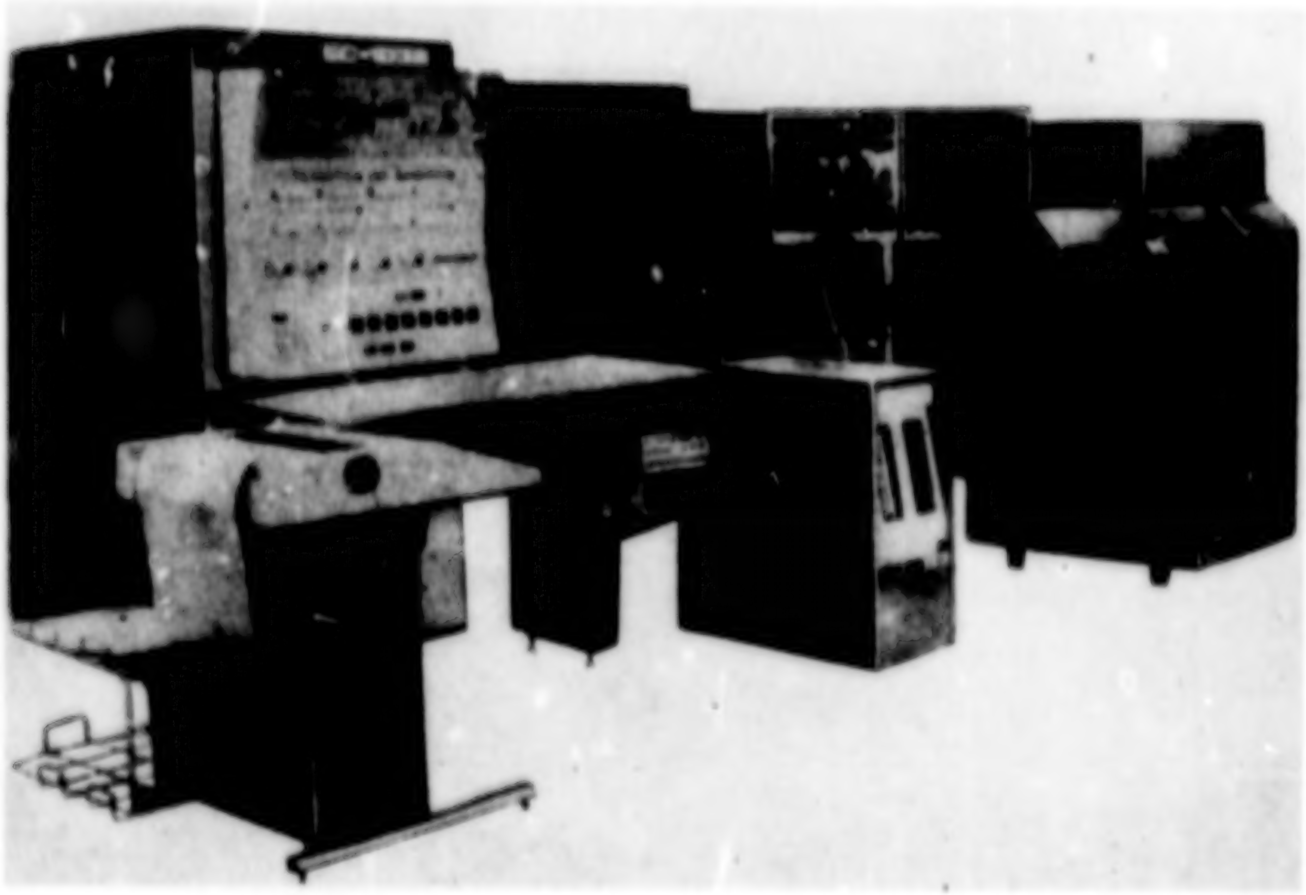
The ES-1035 provides: the putting out of information on punch cards and tape or printed data; the inputting of information from punch cards and tapes; the storage (reading) of information on (or from) magnetic discs and tapes; communications with subscribers over telephone and telegraph channels; the exchanging of information with "display" type devices; the simultaneous operation of 15 user programs with the presence of an operational OS/ES [abbreviation unknown] system; the possibility of creating various configurations of computer complexes; the connecting of a specialized matrix calculation processor, the ES-2335.

The family ES EIM "Ryad-2" is a further development and improvement of the ES EIM "Ryad-1" [Series 1]. Along with employing many technical solutions from the "Ryad-1" the ES-1035 contains the following hardware and software which differ from it.

A reloadable microprogram storage. The ES-1035 has an integral-circuit control storage. It can store microprograms put into the memory from the panel memory on a floppy magnetic disc. The user has an opportunity, when necessary, to change the microprograms kept in the storage. This provides simplicity and convenience in changing the configuration of the computer.

The diagnostic system. With a special set of diagnostic microprograms put in when necessary from the console memory in the ES-1035, there is an opportunity for automatic localization and display of malfunctions with an accuracy which is sufficient for their direct elimination.

Devices for increasing reliability. Single errors in the memory are eliminated automatically. In turning to the internal or microprogram storage, a correcting code is formed which is recorded in the storage. The presence of an error is



analyzed using this code. With the appearance of a single error the information is corrected. The case of the appearance of a binary error is merely recorded.

The commands with a failure are repeated automatically. In the event that the failure has occurred in the processor, control is turned over to the microprogram for repetition. It restores the situation which preceded the failure and turns over control to that area of the microprogram in which the failure occurred. Repetition is rerun up to eight times. With a successful repetition, normal operation resumes but the error is recorded in the memory for further analysis.

High accuracy of floating decimal calculations. The command system includes arithmetic commands which process operands with a floating decimal having a length of 128 digits.

A device for organizing virtual storage. With the virtual organization of storage, the internal memory is imitated with a capacity significantly greater than the actual internal storage. The simulated internal storage is organized using magnetic disc storages.

The presence of a virtual memory provides a number of advantages: it is not necessary to determine fixed areas of the real internal memory for the programs; the operational system can carry out the dynamic distribution of storage; there is a possibility for the programmer to use in his own program an addressable storage with a capacity up to 16 megabytes.

Multiplex mode for the selector channel. This provides an opportunity for the selector channel to be connected simultaneously with several devices whereby data transmission by the interface is carried out at a high speed, and the wait (retrieval) time is comparatively great. The multiplex mode significantly increases the speed of the selector channel and makes it possible to connect up to 612 subchannels to the selector channels.

The ES-1035 includes the following devices: the ES-2635--a processor which consists of a central processor (ES-2435), the processor cabinet (ES-2635.0000.01) with the power supply unit and an IMB [?IBM] internal storage, an operator console (ES-1535.01), a console element for floppy discs (ES-3535), the ES-5067.02--a magnetic disc storage (ZUMD)--2 x 100 megabytes; ES-5567--the control unit for the ZUMD; ES-5667--the control module for the ZUMD; ES-5012.03--the magnetic tape storage (ZUML); ES-5512--the control unit for the ZUML; ES-6019--the data for inputting data from punch cards; ES-7033--an alphanumerical printer (ATsPU); ES-7010--a device for putting out data on punch cards; ES-3238--an additional internal storage.

Coming with the ES-1035 is service equipment used for monitoring, adjusting and performing repairs directly on the computer operating units.

Bulgaria has developed two basic systems (configurations) based on the ES-1035 computer: the ES-1035 system for matrix calculations and the ES-1035 system for the teleprocessing mode (ESTEL 4.1).

The ES-1035 system for matrix calculations includes a specialized processor for matrix calculations, the ES-2335, which performs repeating operations involving elements of large files of data encountered in matrix algebra. The connecting of the matrix processor to the ES-2635 processor is carried out using a modified selector channel (an integrated channel adaptor). The processing of the elements of the file (the matrix) is carried out on a high-speed conveyor arithmetic unit. The microprogram control principle is employed using two reciprocally synchronized microprograms respectively for input-output and data processing.

The ES-1035 system for the teleprocessing mode is a range of functionally compatible hardware and software as well as the procedure charts for telecommunications used for the exchange of data between the computer and a number of distant users over the communications channels and for carrying out the corresponding data processing.

In the teleprocessing mode, the system is designed to solve a broad range of scientific-technical, economic, logical information and other problems. Its basic applications are: the creation of problem-oriented complexes (POK) for the needs of large warehouses, financial and other institutions, for setting up logical information systems and so forth.

The ES-1035 system in the teleprocessing mode is based on the standard configuration of the computer system of the ES-1035 and the ESTEL 4.1 teleprocessing subsystem.

The organization of the ESTEL 4.1 subsystem is based on the concept of the unified computer system for network systems teleprocessing. The programs and equipment of the subsystem provide for performing the functions of distributed processing. A larger portion of the telecommunications devices are programmable and have the possibility of local processing. The possibility has been provided of allocating the resources of the network.

The ES-1035 is a third-generation computer. In terms of its engineering level and rich capabilities it is a modern representative of the series of computers from the Unified System.

10272
CSO: 2202/10

HUNGARY

YOUTH ORIENTED PROGRAM AT PHYSICS RESEARCH INSTITUTE

Budapest MAGYAR IFJUSAG in Hungarian No 12, 20 Mar 81 pp 9-11

[Article and interview with several scientists by Agnes Szesztak: "The Air Is Always Clearer Up on the Mountain"]

[Text] As I was showing my identification and requesting my entry permit at the gate for the fourth time, the lady could not let it go without comment but asked: "Say, what are you doing here every day?"

Since she receives no reply, she waves her hand and hands me the paper which allows me to enter the grounds of the Hungarian Academy of Sciences' Central Physics Research Institute [KFKI] as a guest. Really, what am I looking for? But the expressions "disposition," "remarkably engaging determination" are no more than simply words. But that is what I am seeking--the disposition of the young researchers. Of course, the matter is not quite that simple. It is not at all certain that the physicist is just waiting for someone to disrupt him in his urgent daily work to ask the world's most banal question, namely, "How are you!" "How are you feeling?"

The KFKI is the country's largest research institution. The superlative is not important because of the desire to show off, but to appreciate the meaning of the fact that 650 out of the institute's staff of 2000 are under the age of 30. Of these, 420 are KISZ members. To expand the data further, nearly a half of the KISZ members have their degrees, and since they are under 30, they are recent graduates.

I Could Hardly Wait to Get Here

It is not the easiest matter to be accepted into KFKI, that is, into its four institutes. While it is difficult to get in, staying in is a matter of considerable professional showing. Graduating students may apply, and a committee decides on their admission. Mathematicians and physicists are interviewed on matters of both their specialties and of community life. Those who are admitted must produce a significant scientific "work" within a specified period. This work is generally the doctoral dissertation. Either English or Russian is required as a foreign language. In addition, enrollment in a second foreign language course is recommended.

Those who satisfy the above requirements receive the rank of scientific research worker at a salary which is not dazzling. According to the data of one report, the average income of the young people with advanced degrees is 2,900 forints. The number of applicants is still 2 to 3 times the number of vacancies.

The second interesting fact is that nearly 60 percent of the young people working at KFKI do not have their own apartments. At their acceptance all are warned that the institute cannot assist them in this respect, or rather, it can provide aid, but not to everyone and not immediately.

As a matter of fact, KFKI is attempting to alleviate the apartment shortage by a very humane gesture. The state directorate purchased 3 three room apartments at the Budafok residential complex. The 3 times 3 rooms provide a quiet, temporary home for a determined period (usually 4 years) for 9 people--for the most part for married couples with children. The rental assignment for the rooming house is in the hands of KISZ. The decision is made only after very detailed evaluation and justification.

Gyorgy Mikovary is an electrical engineer who completed his studies in 1978. Currently, he is engaged in the industrial applications of computer technology. During our conversation we had a spirited difference of opinion about the apartment problem. Gyuri is living in the rooming house with his wife.

"Both of us are saving and are putting 1,600 forints a month into the young people's savings bank. In 4 years, when our lease expires, we shall have the price of a bathroom together. At today's prices, 45,000 forints will be sufficient for only that much. But I do not want the state to give me an apartment, or to help me. What I want is for my circumstances to be such as to enable me to resolve my own apartment problem."

[Question] Then why do you not move on to a well paying enterprise?

[Answer] Where? And from here, when I could hardly wait to get here? This is a place where an individual does the work which he loves to the fullest. The company--all young people--is very good, and we spend much time together. Last year, for example, building wind sails became the fad with us. We called in outside help, formed a small team and for months we built wind surfs after work. Do you know how much we "rapped" during this time? This could not be replaced by 5 times the income.

[Question] Then you have very little free time.

[Answer] Not very much. I do KISZ work in what time remains. I am in charge of information.

[Question] I hope you realise that when the readers see this in the newspaper they will laugh and call you a simpleton.

[Answer] Possible, but it does not bother me. I feel at home in this atmosphere--and this is a typical local "phenomenon." We do our community work here neither for money not for snooping. Ask anyone! I will tell you what, ask Tivadar Lippenyi. He was secretary of KISZ and can tell you many stories.

Influence Is of No Avail Here

There is a small group of people at one of the instruments in the large workshop. They push me into a chair. I look into a twin lens microscope and there is a manipulator-like something in my hand. I press a pedal with my food, a beam of rays suddenly appears and in its wake the melting asbestos sheet slowly begins to drip. This is a carbon dioxide laser larynx surgery device--described by an amateur.

This equipment was based on the results of a year's work by Tivadar Lippenyi, with the aid of a 20 watt continuous carbon dioxide laser manufactured by Egyesult Izzo, and the stereo microscope donated by OTKI [Institute of Advanced Medical Training]. These were combined with a micromanipulator.

[Question] How many instruments like this are there in the country?

[Lippenyi] There is one other, at the Oncology Clinic.

With the laser manipulator an operation can be performed without the shaking of the hand holding the instrument shaking, without maneuvering in the narrow confines of the throat, with a minimum of cutting and without after infection. The laser provides the most perfect and most ideal method of operating for cancer of the larynx.

[Question] Are you happy that you prepared such a splendid instrument?

[Lippenyi] Yes. Since I have been here, I have worked on the preparation of 20 different pieces of equipment.

[Question] What is your "original" occupation?

[Lippenyi] I am a mechanical engineer, a machine manufacturing technologist. I have been working with lasers for quite a while now.

[Question] What attracted you to KFKI?

[Lippenyi] I worked here for a year before attending the university. I was very content here. This is a place where values are in the right place. You are not asked "how much money you have made," but "what do you know?" When a talented individual arrives here, he is given the field in which his talents may be developed.

[Question] This is truly a rare place in a world which is painfully careful of "egalitarianism."

[Lippenyi] True. When I was KISZ secretary, I became aware that authoritarian means were of no avail here. Trends could have no great influence here because the guys here sought the rational causes for everything, and occasionally even questioned the central action program.

[Question] What kind of local initiatives did you have?

[Lippenyi] We have an Institute Youth Prize. One can apply annually, but only with a serious publications background. Instead of the Young Engineers and Economists, we have an operating Young Graduates Council. This is an advisory body in addition to the KISZ committee. Many speakers from the public life, the cultural life and from the profession have come to the "Tuesday Night" program organized by our club.

[Question] Do not continue. I am sure that many personal inspirations were sparked...

[Lippenyi] But it is essential to have personal inspirations, even though I believe that not only the workplace should train for community life. It must be started much sooner. We sought out the Arany Janos High School where several of us are serving as group discussion leaders. We are also building a school studio for them.

[Question] How did the kids receive you.

[Lippenyi] We could hardly convince them that we could only meet once every 2 weeks. You cannot imagine how starved they are for conversation, debate, chatter and intelligent thoughts.

[Question] In your view, what is the essence of community life?

[Lippenyi] To seek and provide a moral plus which cannot be found elsewhere in our daily lives.

To Be a Physicist Is a "Condition"

This determination about physicists was made by the engineers, naturally. Whether they be theoretical or experimental, most of the physicists in the country work at KFKI. Other enterprises need one or two occasionally. The theoretical physicists are occupied with basic research, with the phenomena and identification of the basic laws of physics. The uninitiated may say that this is a luxury, but it is immediately evident that basic research serves as the seed of all great discoveries. There is no research for research's sake--or rather, there is, but it is the life element of physics...

According to my conception, a theoretical physicist is one who works with classical physics and sits in front of a large pile of papers and calculates.

According to Istvan Tutto, a colleague at the Solid State Research Institute, the matter is almost like that. Almost.

[Tutto] It is very nice to be a theoretical physicist, but only if the work is related to experimental physics. But the true inspiration is provided by international cooperation.

[Question] International? This always has a suspicious ring for officials: traveling, currency, passport, airplane ticket. I believe that this is all they see in it.

[Tutto] You are right. But it is only possible to reach the world's front ranks through close cooperation with the "world." My correspondence with a Russian or a British physicist is in vain. We must meet in order that conversation provide the new ideas and viewpoints.

[Question] How flexible is KFKI in this respect?

[Tutto] The literature, the publications and the books do reach us. We have made some gains in traveling also. We have a fruitful relationship with the Moscow Landau Institute. They come here and we go there every year. Through personal relationships I spent longer periods in France, Italy and at the Virginia [Wirginia] state university. We worked and corresponded on the same topic. We met, they invited me and I went.

[Question] A physicist then is not an esoteric being after all.

[Tutto] No. While we are required to come in only twice a week, all of us are always chafing at the institute because the collective effort is the real effort. That is where we give reports, hold seminars, and that is where our inspirations arise.

[Question] I am assuming that the atmosphere is favorable.

[Tutto] Yes, a young research group which has gotten used to each other and is good company has developed here at the Solid Body Research Institute.

[Question] Is it true that the physicist works on whatever he feels like?

[Tutto] Yes. But I must add that it must be something which is in the center of interest, something which is under research somewhere else and has a literature.

[Question] Are they allowing you to work?

[Tutto] Definitely. As long as--and this is not self praise--we do research on the world level we can work in peace.

[Question] I was told that you are still an elected member of the 12th district KISZ committee.

[Tutto] I was involved in various KISZ functions here at the institute for a long time.

[Question] How is this compatible with the "Investigation of the Elementary Generation of Superliquid Helium?"

[Tutto] Easily. One brings politization, the predisposition to community life with him. This is a matter of training.

Kati Kamaras, or rather Dr Kati Kamaras, is a chemist. Among those to whom I spoke, nearly everyone has completed his dissertation. They do not use the title because the doctorate is necessary for their work and not for ostentation. Kati recently returned from Gyes. She was home for a year.

The Microclimate Is Very Good

[Question] I was told that I should meet you by all means, because you are a very determined individual.

[Kamaras] Resolute? Perhaps because I have an opinion about everything. Soon after I was employed at the Solid Body Research Institute, I was elected KISZ secretary. It appeared to me that everyone would have liked to do something, and we did indeed desire to do something. However, we did not appreciate the programs thrust upon us from above. Why should 200 of us march out to a parade? Why should 50 of us lay a wreath? We could devise our own worthy commemorations.

[Question] Has this "vetoing" occurred on other occasions?

[Kamaras] I remember one explosive case. KFKI was building apartments on Pulemule Street. A great debate arose about the distribution of the apartments. Someone was appointed to make the selection with complete disregard of our opinion. On hearing this, I called a KISZ meeting, invited the representative of the trade union and asked him how the apartment distribution is to be done. A big debate resulted, with much yelling and many excuses. Finally, the individual stepped down from the appointment--although there were also other reasons for this. Since then, the recommendations of the KISZ organizations have always been extensively considered. We completed a rather important assessment of the situation of young people in recent years. We visited the apartments to verify the validity of our data on site.

[Question] Do you have an apartment?

[Kamaras] Yes. My parents helped us or we also would be without an apartment.

[Question] Kati, did your professional work suffer because of your KISZ work?

[Kamaras] No. I am fortunate to be working with a very good group. When I started here, we began research in a completely new area. Everybody learned anew. There are two chemists and five physicists in this division. Everybody has to work here. I cannot afford not to do my work because then I hinder the others. I like being here very much. The people I respect think like I do. Knowledge is important, and it must be cultivated. I must remark that several times elsewhere I have been informed that many short term interests are more important than knowledge. The microclimate is what is very good. In relation to the early part of your question, when I left the KISZ secretary position, I looked at my calendar and it was full of empty pages. I again had time for everything.

Here Is a Manager

Janos Szlanko is an electrical engineer and mathematician. He is "at least" 35 years old and is department head. He works in the Measurement and Computer Technology Research Institute. The essence of his work is: how can computers be programmed more efficiently, more easily and in a "more human fashion."

[Question] There are only good things said about you as department head. The same is true of the rest of the institute's leadership.

[Szlanko] This is a good place. There are too many intelligent people here to have a dictatorial leadership. KFKI has intensive international relationships, in certain areas it is in the front ranks...

[Question] A surprisingly large number of young people work here.

[Szlanko] The institute itself is not old--only 30 years old. There is a need for the young people. Their intuitions and intellectual activities are very stimulating. There are the physicists, for example: a young physicist can be quite recognized because in physics there is less need for experience than, for example, in medical science. Here logical reasoning can have a great role. Besides, the guys themselves are forced to improve themselves constantly. The poor education system is forcing them to chase after newer and newer knowledge. They form debate circles to acquire knowledge in sociology and the social sciences.

[Question] If I am not mistaken, you were also an active organizer of the "Tuesday Nights."

[Szlanko] Yes, some similar need called this into existence also.

[Question] What is so sharply "different" here, compared to other places of employment?

[Szlanko] One must work hard here, and it is possible to do so. More specifically, talent here receives free rein. The institutional form of developing talent has been realized in KFKI. This is why young people like to come here.

We Have No Time to Run Honor Laps

This statement comes from Manyi Marton, the secretary of the KFKI KISZ. How little time they have for such things is derived from rumors, bits of information extracted with great difficulty, and from conversations. Nobody boasts here, no lists are stuck under my nose. Even the planned action program was shown reluctantly as only a plan!

There is no scarcity of ideas. One of the basic organizations took upon itself to care for three small children whose mother and then the KFKI employed father died tragically soon after each other. The same group devised a programming aid with which even those with reduced vision can program remarkably well.

The environmental monitoring of the Paks Nuclear Power Plant was assumed under the auspices of KISZ. The prospective specialists were trained and the sample analyzing laboratory was prepared ahead of schedule.

As far as apartment action is concerned, KFKI received 20 addresses from the 12th district council. Each of these have attic space for remodeling available. KISZ would like to coordinate the whole action by selecting the tenants and organizing the construction. Of course, they are aware that this is a rather difficult undertaking, but it does not matter since they have the energy. They have members in the apartment commission, and they are voicing their opinions on wage matters. There are basic organizations where nearly everyone is tied down with small children. Well, they got their club, organized a special children's program and supervision for the kids and put out the word that family base organizations can also exist, so formulate your plans accordingly!

This great optimistic tableau perhaps does not meet with everyone's approval. During my lifetime I have written about so many forced, poorly functioning and negative matters that I found it difficult to find the praising words. Besides, literature proves that while stacks of mediocre poetry are written about happy romance, what gems are created by the pains of unrequited love!

KFKI also has its problems. Poor workers, selfish people and mediocre or money hungry individuals exist there also. But their lot there is considerably more difficult than elsewhere, where they may perhaps prosper "in peace."

It is difficult to "endure" incompetence and to disguise uselessness here. Those who realize this in time leave quietly.

9093
CSO: 2502/60

INDUSTRIES PREFER IMPORTED ELECTRONIC PARTS

Budapest MAGYAR HIRLAP in Hungarian 3 Apr 81 p 7

[Excerpts] The enterprises of the Hungarian electronics industry use some Hungarian and some imported parts. To be more precise, if possible--at least according to the manufacturers--they use imported parts although they could buy Hungarian-made parts in most cases. According to a number of consumers, on the other hand, all is not in order insofar as use of domestic transistors, diodes, integrated circuits and other parts is concerned. Production of electronic parts is closely tied to exports: they, parts, can be produced profitably only if the manufacturer plans to sell abroad. This is what the Remix Radio Engineering Factory, one of Hungary's oldest manufacturers of electronic components does. Its exports go chiefly to socialist countries in the amount of three million rubles annually. Insofar as the technological standard of these parts is concerned, some of them would be suitable for sale on dollar-accounting markets. However, according to the foreign buyers, their suggested price is double or triple the going world market price.

In 1968, the Elektromodul was granted foreign trading rights for production equipment. This means that Hungarian consumers can obtain parts through it and can get their products on foreign markets through them.

A recent TV program stated that the electronic parts produced by Egyesult Izzo [United Incandescent] such as transistors, integrated circuits and other semiconductors were not acceptable to domestic consumers, primarily the VIDEOTON Factory. Or rather, VIDEOTON is reluctant to use them. According to Sandor Bozoky, deputy technical-commercial director of the VIDEOTON TV Factory there are problems with the price and quality of certain United Incandescent products. Several times it has occurred that an entire shipment was unsuitable for use and emergency imports were needed to keep the production lines from coming to a halt.

It is also a fact that United Incandescent has acknowledged the validity of VIDEOTON's complaints in a number of cases. Because of this Elektromodul was forced to make supplementary imports in the amount of 60 million forints last year.

Although some officials of United Incandescent feel that complaints are exaggerated and unwarranted, they admit that there has been dissatisfaction in regard to quality.

The rejected shipments are always inspected at United Incandescent. The following is a quote from the inspection records: "We noticed catastrophic faults in the thousand-unit shipment returned to us and then inspected. United Incandescent has acknowledged the claim and will subject the rejected parts to prolonged testing." The prolonged testing consists of running the parts for a week, 168 hours. Shouldn't such tests have been run before shipment? Laszlo Kaszonyi, head of the inspecting laboratory claims not:

"The standard sets forth clearly how many pieces of a lot must be tested and to what extent depending on the size of shipment. Of course the strictness of testing depends on the piece in question and differs depending on whether it is to be used in consumer goods or in computer engineering products. However, we conducted all tests in accordance with international specifications and made shipments thereafter. The faults detected later were individual faults; they are not general flaws."

There should be no misunderstandings: VIDEOTON needs United Incandescent's transistors, diodes and integrated circuits. And United Incandescent is fully aware of the fact that VIDEOTON is its major customer and is therefore making every effort to establish a smooth relationship.

The overall picture in regard to domestic production of electronic parts is very diverse. Elektromodul attempts to meet the demand of local consumers from domestically produced parts primarily. Over the past year this trade amounted to 2 billion 262 million forints. Electronic parts costing a total of 3 billion 674 million forints were purchased abroad. Of these, parts costing 30.5 million rubles were of socialist origin while non-socialist imports amounted to 65.3 million dollars. This ratio presents no problem in itself provided domestic industry can offset it with profitable exports.

What resources does Elektromodul have for remedying the situation? According to Gabor Iklody, managing director of Elektromodul: "We can help the domestic consumer primarily through business and commercial methods. We made a survey of the parts in the stockrooms of enterprises--parts that had not moved for at least a year. The survey revealed parts worth a total of 478 million forints. When we matched this against consumer demand, we discovered that some enterprises were in dire need of products which were superfluous elsewhere. The value of the stockpiles was quickly reduced to 27 million forints."

In response to a question as to whether or not imports of the electronics industry were excessive, the director replied: "It is not so much the quantity as the exceptionally great variety that causes problems. For instance, in 1980 we bought 8,200 types of functioning parts from the capitalist market. Investigation of the parameters revealed that the imports consisted of many small lots of parts for similar purposes but of different design. Naturally each producer makes changes in design so that customers will be obliged to reorder from him. This diversity causes us problems. Domestic production of equipment is too varied also. There is great need for uniform, mandatory line of types. Although both VIDEOTON and Orion make tuners and their function is identical, the design of the tuners is quite different. The losses caused by too much freedom in design can be measured in forints, rubles and dollars.

Maintaining an inventory of parts at the industry level with the aid of a computer can prevent accumulation of stocks which do not move. However, improvement of quality, reliability of parts, adherence to delivery schedules, insistence more broadly usable design can hardly be entrusted to computers."

CSO: 2502/63

POLISH ACADEMY OF SCIENCES ACTIVITIES, PERSONNEL

Warsaw NAUKA POLSKA in Polish No 1-2, Jan-Feb 81 pp 194-207

[Article: "The Chronicle"]

[Excerpts] Current Economic Problems

A meeting of the Main Directorate of the Polish Economic Society [PTE] was held in Warsaw on 18 October 1980 that was dedicated to Poland's current economic problem. The discussions mainly concerned matters related to PTE's role and tasks on reforming the functioning of the economic system. As a result of the meeting four basic tasks were proposed.

First, the coming reform should lead to changes in people's attitudes and motivations, and thus to improvements in the effectiveness of management. Therefore, it should be linked with democratic management in order to utilize fully the aspirations and willingness of workers to participate creatively in shaping the economic life.

Second, emphasis was placed on the need to link self-government with the creation of such conditions as will cause economic calculation and true responsibility of people for work results to function fully.

Third, it was stated that this would not be achieved without restructuring the decisionmaking center, and, in conjunction with this, it was necessary to create methods assuring the correctness of decisions made by the central organs of the economic authorities.

Fourth, it was demonstrated that the economic system must ensure the proficiency of the functioning of the economy at all levels because mechanisms exist in the economy that require radical improvement.

The discussions indicated that peace as well as intense work and efficacious decisions are required to solve the problems. The PTE will collaborate in the work on economic reform. It was resolved that guiding theses will be prepared, and compiled propositions will be discussed thoroughly. PTE representatives also will participate in the work of the commission on economic reforms that was specified in the resolution of the PZPR Central Committee Politburo and the Presidium of the Government.

A Meeting of Economists in Blazejewo

Problems on the effectiveness of management in socialism were the subject of an all-Polish conference of economists that was held in Blazejewo, near Poznan, 23-25 September 1980. About 200 people from institutes of political economy of higher schools from all over Poland as well as a delegation of economists from the GDR participated in the conference.

The most important point of the meetings was informing the conference participants about the initial plans and courses of actions of the commission appointed by the government to reform the national economy, including, among other things, improving supplies, restoring market and foreign trade equilibrium, and improving planning methods.

The Polish economists presented their proposals concerning many important matters of our economy. A special commission was formed from among the participants which is tasked with analyzing all proposals suggested during the discussions. They will be included in a report which will be used to develop Poland's socioeconomic renewal program.

The Problem of Finances in the Economy

An all-Polish conference on "Finances in the Management and Development of the Economy Process" was held 16-18 October 1980 under the sponsorship of the Institute of Finances of the Academy of Economics in Krakow.

The bases for the discussion among the many specialists in attendance were the papers and pronouncements of Prof Janusz Maciaszek on "Economic Financial Equilibrium and Effective Management," and of Prof Roman Domaszewicz on "The Effectiveness of Monetary and Fiscal Policy as Exemplified by the United States and the FRG."

A Meeting of Biochemists

The 17th Congress of the Polish Biochemical Society was held in Warsaw 13-16 September 1980. The purpose of the meeting was to determine Poland's level of development in the biochemical sciences compared to the achievements of the leading foreign centers in this area.

The discussion concentrated on two groups of problems: the use of biochemical principles of solar energy, especially photosynthesis in plant life; and defining the concept of genetic engineering, especially since much misunderstanding has arisen in this area of biochemical sciences over the past years. A group of biochemists from Wroclaw, where the biochemical sciences are expanding intensively, participated in the discussions.

Environmental Protection Problems

The Torun Province Chapter of the Chief Technical Organization [NOT], and the Polish Chemical Society and the Provincial Office in Torun organized a national scientific-technical conference on the achievements and prospects of science and technology in protecting the environment. The conference was held in Torun 18-19 September 1980.

Several dozen specialists from all over Poland participated in the conference. The papers and communiques that were read concerned general as well as specific environmental protection problems, including the progress of the PROAT (Szczecin) and BIPROWOD (Warsaw) design offices concerning the latest solutions and achievements in air- and water-pollution control. The problem of sewage treatment was also of great interest to the participants.

At the end of the conference, the participants visited the Drwecy water intakes, the sewage treatment plant in Elan and Torun's monuments. The need to combine science and technology to protect man's environment was emphasized.

A symposium on "The Natural Environment and Health of Man," organized by the Silesian Academy of Medicine and the PAN [Polish Academy of Sciences] Commission on Protecting Man's Environment in the Industrialized Regions, was held in Katowice 21-22 September 1980. About 400 representatives of the natural, medical and technical sciences from all over Poland, including scientists and practitioners, participated in the meeting.

Prof Jan Jonek, rector of the Silesian Academy of Medicine, delivered the program paper on the role of the medical sciences in protecting human health in highly industrialized urban centers and Dr Karol Grzybowski, director of the provincial "Sanepid" station in Katowice, spoke about the hygienic aspects of developing the environment. This was followed by over 260 communiques, some of which were related to the delivered papers.

There also was a roundtable discussion on "Man in a Worsening Environment," which was led by Kornel Gibinski, PAN fellow.

Applying the Theory of Systems

The fifth Polish-Italian symposium on "Applying the Theory of Systems in Economics, Management and Technology" was held 11-16 June 1980 in Torun. From the Polish side it was organized by the PAN Institute for Systems Research in collaboration with the Ministry of Chemical Industry and the Institute of Economics of the Chemical Industry and from the Italian side, it was the Council of National Research [CNR] Center for Theory of Systems Control in Rome.

The meeting was chaired by Roman Kulikowski, PAN fellow and director of the PAN Institute for Systems Research; Wladyslaw Findeisen, PAN corresponding member and director of the PAN Institute of Automation; Prof Antonio Roberti, rector of Rome University; Prof Siro Lombardini, director of the Institute of Political Economy in Turin.

About 60 distinguished Italian and Polish specialists in the field of control, methods of optimization, systems analyses, the economic sciences and the theory of management participated in the symposium. The Italian delegation represented university centers and research institutes in Rome, Milan, Turin, Genoa and Padua. Among the Polish participants, in addition to the group of workers from the PAN Institute for Systems Research, there were representatives from Warsaw Polytechnic, the Krakow Mining and Metallurgy Academy, the Higher School of Planning and Statistics in Warsaw, the academies of economics in Katowice and Poznan, the PAN Institute of Information Science Principles, and the Institute of Economics of the Chemical Industry in Warsaw.

Forty-five papers, encompassing an extensive range of themes on applications of the theory of systems, were presented. Some of the subjects discussed in the papers were: various aspects of modeling and optimizing regional development; problems associated with optimizing planning and making decisions; problems of economic equilibrium and the phenomenon of discontinuity occurring in economic processes; problems associated with managing complex technological systems; and various aspects of controlling and optimizing technological and water-resources systems.

Papers were also presented on various problems in the realm of the theory of control and optimization. Problems associated with creating and identifying mathematical models of control systems were discussed extensively. Effective algorithms to regulate multidimensional systems were proposed, and the theoretical aspects and applications of linear and nonlinear programming and network methods were also discussed.

A roundtable session was also organized that was devoted to exchanging experiences in the use of models of economic problems, management and regional development problems.

The symposium material, encompassing the complete texts of the papers and the roundtable discussions, will be published (editors: J. Gutenbaum and M. Niezgodka).

Problems of Reactivity in Solid States

An international symposium on reactivity in solid-states was held in Krakow [illegible]-9 September 1980. Representatives of countries having highly developed technologies, including France, the FRG, the United States and the USSR, participated in the sumposium, which was chaired by Jerzy Haber, PAN corresponding member and director of the PAN Institute of Catalysis and Physiochemistry of Surfaces.

The purpose of the meetings, which were held for the first time in a socialist country, was to determine the maximum possibilities of using the interaction of solid-states in the large electronics industries, satellite research, communications equipment, construction and electrical engineering.

Physics for Industry

The Polish Physics Society, the PAN Committee on Physics and the Academy of Mining and Metallurgy [AGH] Institute of Nuclear Physics and Technology in Krakow organized the all-Polish conference on "Physics for Industry" which was held in Krakow 8-10 September 1980. The goal of the organizers was to make it easier for representatives of industry to become acquainted more extensively with the possibilities of practical applications of physics methods, and to facilitate direct contact among physicists working in industry and in scientific institutions.

About 300 people, mainly physicists from the PAN, the higher schools, the ministerial institutions and industrial laboratories, participated in the conference.

Several of the plenary papers presented interesting possibilities for applying physics methods in technology. Poster sessions were the main forum of the conference; the authors presented their offerings for industry on almost 200 posters. It was divided into three basic groups: the application of various physics methods to control the proper operation of technological processes; the development of new technologies (some of them in the laboratory test stage, and others applied in industry); measuring equipment (the initiation of cost--unfortunately in general they are one-of-a-kind models constructed by scientific institutions). Several timely papers on environmental protection and work safety were also presented.

A Chemical and Processing Conference

The 10th all-Polish conference on chemical and processing engineering--a science concerned with technical methods for realizing technological processes in various branches of industry--was held in Lodz 16-19 September 1980. About 300 specialists, representing above all the technical schools, the PAN scientific institutions, the ministerial institutions and industrial research and development centers from all over Poland, participated in the meetings. Foreign guests from West Berlin, Bulgaria, the FRG, Switzerland, Hungary and Great Britain were also present.

Such conferences are held in Poland every few years at different Polish scientific centers. The PAN Committee on Chemical Engineering and the Lodz Polytechnic Institute of Chemical Engineering organized the Lodz conference.

The meeting was divided into two problem sections at which 72 papers were presented; in addition 99 papers and communiques were presented at a poster session.

The conference was accompanied by an exhibit which depicted new technological and design solutions for the rubber and sugar industries while serving to protect the natural environment, and which presented new chemical equipment and achievements commemorating the 10th anniversary of the Lodz Polytechnic Institute of Chemical Engineering. The institute has developed many scientific and technological solutions which are being used by the paint, synthetic fibers, paper, food, pharmaceutical and other industries.

Inorganic Phosphoric Compounds

An all-Polish scientific session on "Inorganic Phosphoric Compounds," which was organized by the Academy of Economics in Wroclaw, was held 21-25 September 1980 in Wroclaw. About 140 scientists, representatives of the higher schools, research institutions, the Inorganic Industry Association, and plants producing phosphoric compounds, participated in the meetings.

Achievements in the chemistry and technology of phosphoric compounds as well as work in the area of agricultural chemistry and the chemistry of fodder phosphors were presented. The principles of fertilizing with phosphors, and the value of chemical fertilizers and their assimilability by plants were also discussed.

A Polish-Soviet Colloquium on the Chemistry of Phosphors

The PAN Center for Molecular and Macromolecular Research, under the auspices of the PAN Committee for the Chemical Sciences and the PAN chapter in Lodz, organized the third colloquium on the chemistry of phosphors which was held in Lodz 24-27 September 1980. Representatives in this area of research from England, France, the GDR, the United States and Hungary also participated in the meeting.

The colloquium provided an opportunity to exchange information and experiences obtained in the chemistry of phosphors. The exchange of scientific information has been going on for several years now within the framework of the bilateral agreement between the Center for Molecular and Macromolecular Research in Lodz and the Institute of Organic-Element Compounds of the USSR Academy of Sciences in Moscow.

An All-Polish Conference of Mathematicians

The Ninth All-Polish Conference on Applied Mathematics was held in Strumiany (Sieradz Province) 13-22 October 1980. About 250 scientists from all the Polish centers as well as scientists from the USSR and Bulgaria, and practitioners from industrial research institutions took part in the meetings.

The conference was organized by the PAN Committee for the Mathematical Sciences, the Main Administration of the Polish Mathematical Society [PTM], the PAN Mathematics Institute and the Institute of Mathematics of Lodz University.

The conference participants learned about the latest mathematical methods and the newest applications of mathematics in the national economy.

At the conference, a problem session entitled "Who Knows How to Solve It?" was held during which the mathematicians were presented with problems that are perplexing industry.

Electromagnetic Compatibility

The Fifth International Symposium on Electromagnetic Compatibility, organized by the Association of Polish Electrical Engineers, Wroclaw Polytechnic and the Communications Institute, was held in Wroclaw 17-19 September 1980. About 200 scientists participated in the symposium, including specialists from other parts of the world including France, Japan, the FRG, the United States, Great Britain, Italy and the socialist countries.

The following subjects, among others, were discussed: computer and mathematical models in compatibility investigations; the statistical aspects of interference; measuring equipment and methods; the biological effects of energy; compatibility aspects of satellite systems; powerline radiation and its interaction with the ionosphere and magnetosphere.

The symposium participants visited the radio-TV relay station in Sleza, the DOLMED Medical Diagnostics Center, and the relay station in Zorawin in which the new 20-meter medium-frequency antenna designed by Prof Daniel Bem of Wroclaw Polytechnic is installed. They also learned about the work of the flying laboratory installed on a helicopter via which measurements are made for all of Poland.

"Hydroforum 80"

The PAN Institute of Fluid-Flow Machinery in Gdansk in cooperation with the Power Industries of the Southern District in Katowice and the Northern District in Bydgoszcz organized a scientific-technical conference called "Hydroforum 80" on water turbines, reversible machines, pumps, hydrokinetic couplings, and fluid-flow and strength problems associated with the operation of these machines. The conference was held 20-23 September 1980 in Kozubnik, near Porabki, and was sponsored by the minister of the power industry and atomic energy.

One hundred and fifteen representatives from Poland's scientific institutions, the power industry and other industries as well as 25 specialists from other countries of Europe participated in the meetings. The purpose of the meetings, during which 42 papers and communiques were presented, was to review and evaluate the more important achievements in the development of hydraulic machines during the last decade, and to discuss the research and development tasks resulting from the government program for the comprehensive development of the power industry. The use of research results in the design and operation of machinery and equipment, and improving the forms of cooperation between industry and the scientific-research institutions were also discussed.

In addition there were two roundtable conferences and several discussion meetings, including one at the pumped-storage electric power plant in Porabce-Zar.

The conference was accompanied by an exhibit which displayed the achievements of the Power Industries of the Southern District regarding the construction of large hydroengineering projects, especially high-power high-head pumped-storage electric power plants and the development of hydropower projects in the areas of the Power Industries of the Northern District. Also illustrated were the research-experimental facilities of the PAN Institute of Fluid-Flow Machines that are operated for the power industry.

Conference of Electronics Engineers

A meeting of electronics engineers attending the European Conference on Circuit Theory and Design, organized by the Polish Association of Electronics Engineers and Warsaw and Gdansk Polytechnics, was held in Warsaw 2-5 September 1980. The meeting was dedicated to problems in the basic disciplines of electronics.

The conference, which was held for the first time in a socialist country, was attended by 350 specialists from almost 30 European countries as well as from India, Japan, Canada and the United States.

The results of research work that are used in many branches of the electronics industry were discussed.

The Fourth National Conference of Electronics Engineers on the theme "Measurements of Semiconductor Components and Integrated Circuits" was held in Gdansk 27-23 September 1980. It was organized by the Gdansk Polytechnic Institute of Electronics Technology, the Industrial Institute of Scientific-Production Electronics of the Center for Semiconductors in Warsaw and the Center's Institute of Electronics Technology in collaboration with the Gdansk chapter of the Polish Association of Electronics Engineers. The meetings were attended by about 120 specialists from several dozen scientific centers, higher schools, and electronics production enterprises in Gdansk, Warsaw, Wroclaw, Bydgoszcz, Poznan, Krakow and other cities.

The meeting was divided into six thematic sections where 84 papers were presented. Experiences in the area of measurements in electronics were exchanged and results discussed.

In conjunction with the conference, an exhibit was held at the House of Techniques of selected electronics equipment produced by the UNIMOR, RADMOR and TELKOM enterprises which organized the expositions.

Meeting of Crystallographers

The 10th Scientific Conference on "Applied Crystallography," organized by the Silesian University and the Institute of the Metallurgy of Iron and supported by the PAN Committee on Crystallography, was held in Kozubnik, near Porabki, 24-26 September 1980. These conferences are traditional and have been held every 2 years since 1962, attracting specialists from all over the world. The present conference was attended by 250 people from 15 countries, including France, Great Britain, the USSR and other peoples' democratic countries.

During the meeting, the latest methodical advances in applied crystallography and their applications in the material sciences (metals, ceramic products, polymers) were presented and thoroughly discussed.

Electronics Technology

The First Conference on Electronic Technology--the first scientific meeting of its kind held in Poland on this theme--which was organized by the Institute of Electronics Technology of Wroclaw Polytechnic, was held 24-27 September 1980 in Wroclaw and Karpacz.

About 250 individuals participated in the conference. In addition to the plenary meetings, the following section meetings also took place: high-vacuum technology; technology of electronic, ion and photon beams; optoelectronics and hybrid microelectronics.

During the conference, the state of the art in the realm of electronics technology was reviewed and Poland's contribution in this area was presented.

Quality-Control Problems

An all-Polish scientific-technical conference on improving quality control in manufacturing and training, which was organized by Gdansk Polytechnic and the NOT Provincial Chapter in collaboration with the Maritime Repair Shipyards, was held in Gdansk from 16-17 October 1980. About 100 scientists and practitioners from various Polish centers participated in the meeting.

In addition to the two plenary sessions--at the inauguration and conclusion--three thematic sections were formed which discussed the following problems: the principles of quality control--discussed in 17 papers; quality control in metrology and technical diagnostics; quality in the teaching and improvement of cadres--discussed in 7 papers.

The results of the discussions will be presented to scientific institutions, schools and interested industries in order to put them into practice.

Conditions for Expanding the Food Economy

An all-Polish scientific-technical conference on "The Regulation of Water Ratios as a Condition for Expanding the Food Economy" was held in Torun on 19 September 1980. The conference was organized by the Administration of the Torun Branch of the Association of Water and Reclamation Engineers and Technicians.

The following were discussed: problems in reclaiming agricultural lands and supplying water to rural areas in the 35-year or long-range operational program in this area; development trends in mechanizing work in hydroengineering and land reclamation projects and supplying water for agriculture; the technical and economic aspects of developing the lower Vistula River and the problem of reclaiming soil as exemplified by the work done by Torun land reclamation specialists in Iraq.

During the discussions it was stated that land reclamation trends and technology to date, resulting from Poland's needs and capabilities during various stages of its development, fulfilled their economic tasks, but future development trends should be adapted to future methods of management and the level of employment in agriculture. It was emphasized that investments should be concentrated in regions having good natural potentials and in areas that will guarantee a rapid growth rate and modernization of agricultural production.

During the conference, deserving members of the association were awarded gold and silver honorary decorations.

Intensification of Food Production

A scientific session in honor of the 30th anniversary of the Agritechnical Academy and the central inauguration of the academic year was held in Olsztyn 29-30 September 1980. In addition to scientists from the Olsztyn school, representatives of agricultural schools and ministerial institutions from all over Poland, viovodes from the neighboring northern provinces, and foreign guests from Bulgaria, Czechoslovakia, the GDR, Hungary and the USSR participated in the sessions.

The intensification of food production, which is of key significance in Poland's current economic situation, was the main theme of the meeting. Among other things, Prof Witold Niewiadomski said that land is Poland's greatest asset and thus it should be given special protection and properly cultivated. A program to protect agricultural land is needed; the program should involve such crucial links as scrupulous registration and control of land designated for nonagricultural use; combating all aspects of soil devastation; re-creating agricultural land in areas exploited by industry; improving economically neglected farms; full development of land from the National Land Fund.

Much attention was dedicated to the shortage of fodder. It was indicated that the problem can be alleviated significantly, and even completely eliminated, if existing possibilities were used more extensively. But too little attention is paid to the cultivation of leguminous plants despite the fact that we have the proper light soil. As emphasized by Prof Czeslaw Lewicki, there are immense reserves to be found in animal production. Poland's entire northern region is especially suited for the large-scale development of animal husbandry. However, to this end the proper technological animal groups and crop structures that meet nutrient quality requirements must be selected in addition to undertaking other essential actions.

The general conclusion of this session was that intensification of food production requires energetic, coordinated action from all interested parties: from farmers, regional administrators, industry and science. This can significantly accelerate the upgrading of our agriculture and make it a branch that determines the wealth of the entire nation.

Anniversary Meeting of Polish Surgeons

The 50th Congress of Polish Surgeons was held in Krakow 17-20 September 1980. It was attended by 1,200 surgeons, including 200 from the most famous foreign medical centers. Henryk Jablonski, PAN fellow and chairman of the Council of State, was the patron of the congress.

The congress coincided with the 200th anniversary of the organization in Krakow of the first clinical hospital in Poland, the 100th anniversary of the introduction by Ludwig Rydygier (1850-1920), Jagiellonian University professor, of the first stomach resection in the world--an event acknowledged as critical in the history of surgery in the world--and the fifth anniversary of the resumption--by continuators of Jagiellonian University Professor Jan Mikulicz-Radecki (1850-1905), creator of many operating procedures, especially endoscopy, which is developing so splendidly today--of complex investigations of treating stomach cancer and ulcerous diseases of the stomach and duodenum.

Independent of its jubilee accent, the congress was primarily a working one at which over 170 papers on the latest Polish and world achievements in surgery were presented. Several generations of eminent surgeons have been educated in Krakow. In 1899, Krakow was the site of 17 Society of Surgeons congresses.

Third Congress of Gerontologists

The Third National Scientific Congress of the Polish Gerontological Society was held in Bialystok 19-20 September 1980. Sociologists, psychologists, demographers and doctors concerned with various aspects of aging and problems of old age participated in the congress.

The effect of the environment on the aging process and old age was the main theme of the meeting. The socioeconomic as well as medical problems of old people were discussed in the papers.

Congress of Pharmacologists

An all-Polish congress of the Polish Pharmacological Society was held in Poznan 25-27 September 1980. It was attended by 200 scientists from the European countries and from Japan, Canada and the United States.

The problem of the effects of medicines on the nervous and circulatory systems was one of the important themes of the meeting.

Meeting of Anesthesiologists in Lodz

A symposium on the use of manufactured nutrients to feed seriously ill patients was held in Lodz 19-20 October 1980. The symposium was organized by the Department of Anesthesiology of the Institute of Surgery of the Academy of Medicine in Lodz and the Lodz chapter of the Society of Polish Anesthesiologists, and the POLFA Kutnowski plants.

The specialists attending the symposium discussed their experiences to date in the use of nutrients for different illnesses. The need to develop proper principles for using manufactured nutrients and constantly improving the means of their production by Poland's pharmaceutical industry was emphasized.

Progress of Allergy in Medicine

An all-Polish scientific session on the theme "Progress in Allergy in Internal Medicine, Pediatrics, Dermatology and Otorhindlaryngology" was organized by the Administration of the Allergological Section of the Polish Association of Physicians [PTL], Clinic 1 for Internal and Allergic Illnesses of Medical Department II of the Academy of Medicine, and the Gdansk Department in Bydogoszcz.

The meeting, which took place on 20 October 1980 in Bydogoszcz, was attended by many specialists interested in this problem. Among other things, illnesses of the alimentary canal and progress in the knowledge of their treatment were discussed in the papers. In addition, the administration of the PTL Allergy Section delivered an accounting.

The Polish Nutritional Sciences Society [PTNZ]

Through the efforts of scientists concerned with nutrition in Poland, especially members of the PAN Committee on Human Nutrition, an association called the Polish Nutritional Sciences Society was formed and registered on 25 August 1980.*

The purpose of the society is:

1. to organize and support activity to develop the nutritional sciences in Poland;

2. to popularize scientific discoveries in the field of nutrition;

3. to propagate at international forums the achievements of Polish sciences in the field of nutrition;

4. to conduct activity to influence the involvement, and ideological and civic attitudes of its members.

These goals will be realized by:

1. organizing meetings, conferences, symposia and scientific congresses;

2. organizing lectures, readings, exhibits and other forms of popularizing the science of nutrition (via the mass media);

3. cooperating with the PAN and its institutions as well as with the ministries and institutions concerned with the problem of nutrition;

4. cooperating with Polish and foreign organizations having similar profiles and activities;

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*Register of Associations and Unions of the Department for Social Administrative Matters of the Administration for the City of Warsaw, No 1030.

5. taking the initiative and formulating ideas on nutrition needs in Poland;

6. conducting publication activities in the field of nutrition.

A regular member of the society must be a Polish citizen, a graduate of the higher schools, and give evidence of scientific or popular work in human nutrition or elements of animal nutrition.

At the first general meeting of the PTNZ founders, which was held in Warsaw on 29 September 1980, the 20-member main administration was elected from which the chairman (Prof Dr Wiktor Szotar), the secretary (Doc Dr Anna Gronowska-Senger), and the treasurer (Prof Dr Swiatoslaw Ziemlanski) were selected. Also selected were the Main Revisory Commission (chairman--Prof Dr Henryk Gertig) and the Main Court of Arbitration (chairman--Prof Dr Wladyslaw Kierst).

In addition to its statutory and organizational activities (including the creation of PTNZ branches and recruiting its members or problem sections), the PTNZ will concentrate its efforts in the present tenure on elevating the prestige of the nutritional sciences; it also resolves to represent these sciences in Poland and abroad and collaborate with similar organizations.

Within the framework of its activities, the PTNZ also desires to create scientific bases for resolving complex problems of food.

The PTNZ is headquartered at the Central School of Farming; Academy of Agriculture Institute of Human Nutrition, Nowoursynowska 166, Warsaw 02-766.

Protection and Development of the Environment

The city and province administrations of Poznan, the PAN Department of Agricultural Biology, and the Artists Association for Protecting the Environment organized an exhibit in Poznan called "The Protection and Development of the Environment," which was held 14-29 October 1980.

The exhibit included three sections: technology, nature and culture. The exhibits were grouped in three sections by about 100 exhibitors and illustrated the significance of developing and protecting the environment for man.

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PRESENT CONCERNS, FUTURE DIRECTION OF SOLAR ENERGY RESEARCH

Bucharest SCINTEIA in Romanian 13 Mar 81 p 3

[Interview by Elena Mantu]

[Text] A technical-scientific premiere occurred several months ago: the production of ice using solar energy. The installation was built by specialists from the Institute for Scientific Research and Technologic Engineering for Power Equipment and Hoisting Machinery (ICSITEEMR), where it was designed by Eng Mihai Stoicovici.

This achievement joins the many applications of previous years and those of this year. According to the plan, for instance, 20 specific applications in every domain will be achieved during this year alone; they are: standard installations for heating technical water at animal farms and in the food industry, for drying grain, tobacco, and lumber, and for heating and de-icing tar. In addition, projects will be completed for housing (P+1 with four appartments) in rural areas, where solar energy will be used to heat rooms and household water. These applications are scientifically studied by many specialists in our country, and by large collectives with hundreds of specialists in education, research, and production.

[Question] What are the current and long range concerns of researchers in this domain?

[Answer] Solar thermotechnology, our area of research, we are told by Eng Teodor Ionasek, department head at ICSITEEMR, seeks the construction of second generation equipment and installations to convert solar energy into heat, and to use it in technical processes that require hot air and water at temperatures of 35-70 degrees C, or to produce ice. We are concerned not only with research, but also with implementing installations for users, as well as expanding the domains of utilization of solar energy into the most diverse technical processes, since it is well known that any application means a saving of conventional fuels. We need only show that one square meter of collector means a savings of 67-70 kg of conventional fuels per year. The new type of collector in production at the mechanical enterprise Sadu, with a steel rather than aluminum shell, is less expensive and of better quality. We, as well as the users, are very satisfied with the new collector, but we must continue more intensively our efforts to reduce production costs and improve performances.

Another direction of technical research and engineering is aimed at the use of solar energy in construction and architecture, namely to produce hot water for houses, social groups of industrial enterprises, dormitories, schools, hospitals, and so on, as well as to heat living areas, production shops, and so on. Many Romanian collectives participated in the achievement of these objectives. According to Eng Valeriu Cristescu, director general of the Central Institute for Construction Research, Design, and Orientation, "more than 1500 apartments in the counties of Timis and Prahova were equipped with hot water heating installations during 1980, and another 10,000 apartments will receive similar installations during 1981. To this end, the National Council for Science and Technology has allocated special funds for the express purpose of convincing as many users as possible about the economic advantages of this new and inexhaustible source of energy.

Although more than 3500 apartments should have been equipped during last year, no more than 50 percent of them were completed because such counties as Teleorman and Dimbovita, which receive more sun than the average for [illegible] country, returned their 1980 funds under various pretexts. So while efforts are being made to find ways to reduce the consumption of oil and natural gas, some counties feel free to use them as if our economy had an unlimited amount of them at its disposal. Strange, and especially damaging, attitude! During the current five-year plan we anticipate the construction of nearly 400,000 apartments which will have solar energy installations. This will be possible only to the extent to which all counties -- like Arges, Prahova, Timis -- will concern themselves with the introduction of solar energy in housing."

The directive-program in the energy domain stipulates that at the closing of the current five-year plan, 5 percent of the electric power will be obtained from solar and secondary energy resources, using a freon turbogenerator designed for solar power plants.

[Question] What is being done to implement this goal?

[Answer] Our solar energy research, states Eng Constantin Popescu, department head at the Institute for Energy Research and Modernization (ICEMENERG), is aimed at the conversion of solar energy into electric power using conventional thermal-cycle plants of low and intermediate power. We are currently building Romania's first solar-electric plant, an experimental pilot installation of 30 kW, which we will begin testing in a few days, on 30 March. And on the drawing board we are outlining another plant with a minimum of 100 kW, which in 1500 hours of operation will save 1150 tons of conventional fuel per year. In addition to the fuel savings, the new centrals have the advantage that they can be used in small enterprises or in areas that are poorly accessible and where hook-up to the national network is expensive.

One of the newest and most promising domains is solar electronics and electromechanics. "Our interest in this new domain," we learn from Doina Moraru, a physicist and head of the solar energy collective at the Research Institute for the Electromechanical Industry (ICPE), "is aimed at the direct conversion of solar energy into electricity by means of photovoltaic cells, for which purpose we are building low-power supply assemblies for isolated users such as weather stations, buoys, telecommunications, and various signal systems (water level and flow, and so on). On the basis of a research program oriented toward physical chemistry, we have undertaken the task of producing converter materials and technologies which would result in a solar cell with a broad range of applications. At present, we are concerned with improving the technical performance of laboratory solar cells and achieve lower costs, so that their large scale utilization will be felt significantly in the country's energy balance."

While the research carried out by the various institutes described here seemed like a promise for the future until not too long ago, it now decisively leads to large scale and numerous practical applications of solar energy, a task that was pointed out anew during the recent session of the Executive Political Committee of the RCP.

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DEVELOPMENT OF HERBICIDE USE IN AGRICULTURE STUDIED

Bucharest SCINTEIA in Romanian 18 Mar 81 p 3

[Interview with Prof Dr Engr Ion Ceausescu, deputy minister of agriculture and the food industry, by Ioana Dabu]

[Text] A topic of the day, now, at the height of the spring farming operations is the use of herbicides, substances which, as is known, assure the destruction of weeds. Together with chemical fertilizers and insecticides, they are important factors in the chemical arsenal of agriculture. A crop like corn would provide harvests at least 25 percent lower because of weeds such as bristle grass, bindweed, amaranth, and horse thistle, in the absence of fighting agents, including chemicals. In light of the fact that the Ministry of Agriculture and the Food Industry, in conjunction with the Academy of Agricultural and Silvicultural Sciences, is now evolving production technologies for each individual crop, it is important to know what is the "guide" available for wisely using the herbicides, as a consequence of the results obtained in scientific research units.

In our country -- Prof Dr Engr Ion Ceausescu stated -- the use of herbicides has considerably expanded in the last 15 years. Herbicides have been used in a proportion of almost 100 percent for the main crops. As an example, for corn, in 1980, herbicides were used on 2.516 million hectares out of the 2.670 million hectares planted in the cooperativized and state sectors, and this accounts for 94.2 percent of the total, and in state agricultural enterprises, in a proportion of 100 percent. Concomitantly with expanding the areas on which herbicides were used, there also was a diversification in the kinds of herbicides, and this has ensured a better weed control. For field, horticultural and viticultural crops, actually for all the crops that are subject to herbicide use, tests were conducted on domestic and foreign products which were tried on various types of soil, in different combinations and under varied climatic conditions. Moreover, as a result of these surveys, the experts determined optimal doses and periods for use and technologies which correspond to most diversified kinds of crops.

The increased Romanian input into the sensible use of herbicides has justified the organization so far of two national symposia on herbology. On those occasions, two volumes were issued, which contain the most significant results of research in the area of weed control. The first symposium, held in Constanta, in 1978, and the second one, held in Pitesti, at the end of 1980, provided many conclusions and recommendations for agricultural techniques. We plan to incorporate the results of research for this year and 1982 into another volume which we will present to the third national symposium on herbology. We even plan to lend an international character to these symposia, which you can see, are beginning to become traditional, and invite foreign experts in order to confront the results obtained abroad with those obtained here and thus shorten the investigative cycle and implicitly use new substances designed to protect the crops and also protect all the environment.

[Question] Please specify what are the goals of Romanian research in the next period?

[Answer] In controlling weeds in Romania, great emphasis is placed on residual herbicides, that inhibit photosynthesis, chiefly, triazines. Hence, research needs to develop approaches to avoid or compensate their possible remanent effect, and also the production drops for the crops that preceded the treated crops; approaches to replacing the crops which were jeopardized by the phytotoxic effect of herbicides, under special climatic conditions, or in consequence of technological errors. Other surveys will focus on studying the impact of these substances on the quality of the agricultural output, by determining the conditions under which foods and fodder might be contaminated with residues, the dosages and the period of rest needed to avoid this phenomenon. Emphasis must also be placed on the need for multidisciplinary research, with the involvement of experts in soil biology and plant biochemistry and physiology.

Consequently, there is the need for new, many-sided and complex directions, which should generate a clear and easily applicable methodology for all the agricultural branches. However, it must be clear to all experts that the wise use of chemical substances, of herbicides, does not exclude traditional methods used so far. Conversely, scientific research, farming practice, have fully proved that the efficacy of these substances is far greater when all the other farming procedures are used. Even if there appeared a substance with a "miraculous" herbicidal effect, capable of destroying all weeds, we could not accept such a concept because the role of conventional methods is not only of controlling the weeds. They have manifold impacts on soil biology, on chemical processes, on the accumulation of water and nutritional agents, involve measures of controlling certain pests and diseases, soil conservation, and so forth. Hence, weed control is successful only in the context of combining chemical methods with agrophytotechnical methods, this being the sole safe avenue to enhancing the efficiency of crops.

[Question] Both symposia which you mentioned, in the context of close linkage, discussed the issue of wise use of herbicides and protection of ecosystems. Why this linkage?

[Answer] There is an organic and evident link between modern agriculture and the protection of ecosystems. The sensible, scientifically-based use of chemicalization permits the obtaining of high outputs and the conservation of an unchanged environment. The use of herbicides, of chemical fertilizer, and of pesticides, without meeting certain standards of tolerance, has harmful effects on the environment and human life. That is the reason why we campaign and work so that all the chemical arsenal available may be used sensibly. That is why we tie the overall problems of agriculture to environmental problems. Actually, scientific agriculture is contingent upon the protection of the environment and reciprocity is absolutely identical: a prosperous, viable environment, which guarantees a high quality of life is largely related to the existence of an unpolluted and unpolluting agriculture. In addition to the two volumes which contain the studies on herbicide use, conducted on farm crops, on the occasion of the two symposia mentioned above there were also issued two individual volumes on ecology and the protection of ecosystems, in this dialectical concept of the reciprocal relations between the environment and modern agriculture.

The topics which served to tie the protection of ecosystems to agriculture and the sensible use of herbicides permitted to establish cooperation with experts in various areas who suggested new lines of research. Consequently, in the volume "Sensible Use of Herbicides," issued on the occasion of the Pitesti symposium, a broad chapter was incorporated, which deals with studies on herbicidal residues in soil and crops and also biological and physiological surveys on herbicide use. Moreover, in the other volume, entitled "Ecology and Protection of Ecosystems," a major chapter was incorporated, dealing with research on agroecosystems and their efficiency; aspects of agricultural chemicalization; tactics of integrated control; reduction of energy consumption in crop technology, a significant contribution to the protection of the environment.

The basic idea spotlighted by experts, both in their addresses at the symposium and in the surveys issued on that occasion is that modern agriculture also is a factor in the protection of ecosystems and the overall salubrity of the environment.

The above statements generate the conclusion that both the matters of wise use of herbicides and the protection of ecosystems are very topical matters. They will continue to concern experts in the next decades by their ramifications in the development of society. Therefore, it is expected that all those involved with these problems, all those who work directly in the areas concerned, will make efforts so that by their joint inputs they may assure the harmonious growth of Romanian agriculture.

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